

WHAT IS CLAIMED IS:

1. An image processing apparatus for subjecting an input image signal to an enlargement/reduction process on the basis of a predetermined enlargement/reduction magnification, the apparatus comprising:

first discrimination means for generating a first discrimination signal by determining an attribute of each of pixels on the basis of the input image signal;

image enlargement/reduction means for subjecting  
10 the input image signal to the enlargement/reduction  
process on the basis of the enlargement/reduction  
magnification;

second discrimination means for generating a second discrimination signal by subjecting the first discrimination signal from the first discrimination means to the enlargement/reduction process on the basis of the enlargement/reduction magnification; and

image processing means for performing an image  
process for the enlarged/reduced image signal from the  
20 image enlargement/reduction means on the basis of the  
second discrimination signal.

2. An image processing apparatus according to claim 1, wherein the first discrimination signal generated by the first discrimination means is a two-value signal.

3. An image processing apparatus according to claim 1, wherein the first discrimination signal

4. An image processing apparatus according to claim 1, wherein an image signal selected by the first discrimination signal from the first discrimination means from among image signals processed and output from a plurality of image processing units, which have mutually different characteristics for applying a predetermined image process to the input image signal, is subjected by said image enlargement/reduction means to the enlargement/reduction process on the basis of the enlargement/reduction magnification.

pixel division means for dividing pixel information associated with the first discrimination signal, which pixel information belongs to an object pixel range, on the basis of the enlargement/reduction magnification, and retaining the divided pixel information;

a plurality of arithmetic operation means for  
subjecting the pixel information belonging to the  
object pixel range, which has been divided by the pixel  
division means, to predetermined arithmetic operations,  
25 thereby outputting enlarged/reduced discrimination  
signals associated with the pixels; and

selection means for selecting one of the output signals from the plural arithmetic operation means on the basis of an externally provided switching condition.

5 6. An image processing apparatus according to claim 5, wherein the externally provided switching condition, which is input to the selection means, is one of an enlargement/reduction magnification, a kind of an original, and an image process adjustment value, which are selected by external input operations.

10 7. An image processing apparatus according to claim 5, wherein where the first discrimination signal generated by the first discrimination means is a two-value signal, each of the plural arithmetic operation means performs an arithmetic operation of one of a  
15 logical sum of pixel information in an object range divided by the pixel division means, a logical product of the pixel information in the object range divided by the pixel division means, a pixel value at a fixed position such as a first pixel or a last pixel in the  
20 object range, and a weighted sum corresponding to the magnification.

25 8. An image processing apparatus according to claim 5, wherein where the first discrimination signal generated by the first discrimination means is a multi-value signal, each of the plural arithmetic operation means performs an arithmetic operation of one of a pixel value at a fixed position, such as a first pixel

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or a last pixel, of pixel information in an object range divided by the pixel division means, a maximum or minimum value of the pixel information in the object range, and a weighted sum corresponding to the magnification.

9. An image processing apparatus for subjecting an input image signal to an enlargement/reduction process on the basis of a predetermined enlargement/reduction magnification, the apparatus comprising:

first discrimination means for generating a first discrimination signal by determining an attribute of each of at least one area obtained by dividing an input image on the basis of the input image signal;

second discrimination means for generating a second discrimination signal by determining an attribute of each of pixels on the basis of the input image signal and the first discrimination signal from the first discrimination means;

image enlargement/reduction means for subjecting the input image signal to the enlargement/reduction process on the basis of the enlargement/reduction magnification;

third discrimination means for generating a third discrimination signal by subjecting the second discrimination signal from the second discrimination means to the enlargement/reduction process on the basis of the enlargement/reduction magnification; and

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image processing means for performing an image process for the enlarged/reduced image signal from the image enlargement/reduction means on the basis of the third discrimination signal.

5        10. An image processing apparatus according to claim 9, wherein the second discrimination signal generated by the second discrimination means is a two-value signal.

10       11. An image processing apparatus according to claim 9, wherein the second discrimination signal generated by the second discrimination means is a multi-value signal.

15       12. An image processing apparatus according to claim 9, wherein said third discrimination means comprises:

pixel division means for dividing pixel information associated with the second discrimination signal from the second discrimination means, which pixel information belongs to an object pixel range, on the basis of the enlargement/reduction magnification, and retaining the divided pixel information;

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a plurality of arithmetic operation means for subjecting the pixel information belonging to the object pixel range, which has been divided by the pixel division means, to predetermined arithmetic operations, thereby outputting enlarged/reduced attribute discrimination signals associated with the pixels; and

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selection means for selecting one of the output signals from the plural arithmetic operation means on the basis of an externally provided switching condition and the first discrimination signal from the first discrimination means.

13. An image processing apparatus according to claim 12, wherein the externally provided switching condition, which is input to the selection means, is one of an enlargement/reduction magnification, a kind of an original, and an image process adjustment value, which are selected by external input operations.

14. An image processing apparatus according to claim 12, wherein where the second discrimination signal generated by the second discrimination means is a two-value signal, each of the plural arithmetic operation means of the third discrimination means performs an arithmetic operation of one of a logical sum of pixel information in an object range divided by the pixel division means, a logical product of the pixel information in the object range divided by the pixel division means, a pixel value at a fixed position such as a first pixel or a last pixel in the object range, and a weighted sum corresponding to the magnification.

15. An image processing apparatus according to claim 12, wherein where the second discrimination signal generated by the second discrimination means is

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a multi-value signal, each of the plural arithmetic operation means of the third discrimination means performs an arithmetic operation of one of a pixel value at a fixed position, such as a first pixel or a last pixel, of pixel information in an object range divided by the pixel division means, a maximum or minimum value of the pixel information in the object range, and a weighted sum corresponding to the magnification.

16. An image processing method for subjecting an input image signal to an enlargement/reduction process on the basis of a predetermined enlargement/reduction magnification, the method comprising the steps of:

generating a first discrimination signal by determining an attribute of each of pixels on the basis of the input image signal;

subjecting the input image signal to the enlargement/reduction process on the basis of the enlargement/reduction magnification;

generating a second discrimination signal by subjecting the first discrimination signal from the first discrimination means to the enlargement/reduction process on the basis of the enlargement/reduction magnification; and

performing an image process for the enlarged/reduced image signal from the image

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enlargement/reduction means on the basis of the second  
discrimination signal.

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